

B<sub>1</sub>  
Concl

adsorbing harmful substance in an exhaust gas and a catalyst zone comprising at least one catalyst containing a catalyst component capable of reducing said harmful substances, [both] said adsorbent zone and said catalyst zone being provided in-line in an exhaust pipe of an internal combustion engine with said adsorbent zone being upstream of said catalyst zone with respect to flow of said exhaust gas, in which system harmful substances in an exhaust gas during cold engine start up of the internal combustion engine are adsorbed by the adsorbent and the adsorbed harmful substances are desorbed from the adsorbent with a temperature rise of the adsorbent caused by the heat of the exhaust gas and are burnt on the catalyst, wherein the adsorbent contains an H/ $\beta$ -zeolite having an SiO<sub>2</sub>/AlO<sub>3</sub> ratio of 100 or more and further contains at least one noble metal selected from Pt, Pd and Rh as a catalyst component.

---

B<sub>2</sub>

15. (Amended) A system according to claim 7, wherein said noble metal contained in said at least one adsorbent is loaded on a heat-resistant oxide.

16. (Amended) A system according to claim 9, wherein said


B2  
Cont'd

noble metal contained in said at least one adsorbent is loaded on a heat-resistant oxide.

17. (Amended) A system according to claim 11, wherein said noble metal contained in said at least one adsorbent is loaded on a heat-resistant oxide.

18. (Amended) A system according to claim 13, wherein said noble metal contained in said at least one adsorbent is loaded on a heat-resistant oxide.

19. (Amended) A system according to claim 7, wherein said at least one adsorbent is honeycomb shaped and has a hollow central portion at which honeycomb cells are absent, said hollow central portion extending in the direction of flow of exhaust gas so as to allow exhaust gas to [blow] flow through said hollow center portion.

 20. (Amended) A system according to claim 9, wherein said at least one adsorbent is honeycomb shaped and has a hollow central

B3  
2  
cond  
portion at which honeycomb cells are absent extending in the  
direction of flow of exhaust gas.

21. (Amended) A system according to claim 11, wherein said at least one adsorbent is honeycomb shaped and has a hollow central portion at which honeycomb cells are absent extending in the direction of flow of exhaust gas.

22. (Amended) A system according to claim 15, wherein said at least one adsorbent is honeycomb shaped and has a hollow central portion at which honeycomb cells are absent extending in the direction of flow of exhaust gas.

✓  
Cancel claims 23-25.

B3  
2  
13  
26. (Amended) A system for exhaust gas purification,  
[comprising] consisting essentially of:  
an adsorbent zone comprising at least one adsorbent capable of  
adsorbing harmful substance in an exhaust gas and a catalyst zone  
comprising at least one catalyst containing a catalyst component

B3  
cancel

capable of reducing said harmful substances, [both] said adsorbent zone and said catalyst zone being provided in-line in an exhaust pipe of an internal combustion engine with said adsorbent zone being upstream of said catalyst zone with respect to flow of said exhaust gas, in which system harmful substances in an exhaust gas during cold engine start up of the internal combustion engine are adsorbed by the adsorbent and the adsorbed harmful substances are desorbed from the adsorbent with a temperature rise of the adsorbent caused by the heat of the exhaust gas and are burnt on the catalyst, wherein the adsorbent contains an H/ $\beta$ -zeolite having an  $\text{SiO}_2/\text{AlO}_3$  ratio of 100 or more, and said adsorbent has a honeycomb shape with a hollow central portion at which honeycomb cells are absent extending in the direction of flow of exhaust gas.

/

Add the following new claims to the application:

B4

27. (New) A system for exhaust gas purification, consisting essentially of:

a first catalyst zone comprising at least one catalyst containing a catalyst component capable of reducing harmful

3  
4  
Contd

substances in an exhaust gas; an adsorbent zone comprising at least one adsorbent capable of adsorbing said harmful substances; and a second catalyst zone comprising at least one catalyst containing a catalyst component capable of reducing said harmful substances; said first catalyst zone, said adsorbent zone and said second catalyst zone being provided in-line in an exhaust pipe of an internal combustion engine and without means for transferring heat from the first catalyst zone to the second catalyst zone, wherein said first catalyst zone is upstream of said adsorbent zone and said adsorbent zone is upstream of said second catalyst zone with respect to flow of said exhaust gas; in which system harmful substances in an exhaust gas during cold engine start up of the internal combustion engine are adsorbed by the adsorbent and the adsorbed harmful substances are desorbed from the adsorbent with a temperature rise of the adsorbent caused by the heat of the exhaust gas and are burnt in the second catalyst zone, wherein the adsorbent contains an H/ $\beta$ -zeolite having an  $\text{SiO}_2/\text{AlO}_3$  ratio of 100 or more and further contains at least one noble metal selected from Pt, Pd and Rh as a catalyst component.

 28. (New) A system for exhaust gas purification, consisting essentially of:

a first catalyst zone comprising at least one catalyst containing a catalyst component capable of reducing harmful substances in an exhaust gas; an adsorbent zone comprising at least one adsorbent capable of adsorbing said harmful substances; and a second catalyst zone comprising at least one catalyst containing a catalyst component capable of reducing said harmful substances; said first catalyst zone, said adsorbent zone and said second catalyst zone being provided in-line in an exhaust pipe of an internal combustion engine and without means for transferring heat from the first catalyst zone to the second catalyst zone, wherein said first catalyst zone is upstream of said adsorbent zone and said adsorbent zone is upstream of said second catalyst zone with respect to flow of said exhaust gas; in which system harmful substances in an exhaust gas during cold engine start up of the internal combustion engine are adsorbed by the adsorbent and the adsorbed harmful substances are desorbed from the adsorbent with a temperature rise of the adsorbent caused by the heat of the exhaust gas and are burnt in the second catalyst zone, wherein the